

Days: 2

Prerequisites: No prior experience required.

Audience: Prompt Engineers, Sales & Pre-Sales Engineering, Business Analysts, Data Analysts, Application Developers, or staff responsible for integrating Gen AI into project Workflows.

Description: Prompt Engineering Essentials is a two-day, hands-on immersion designed to transform the way professionals interact with Artificial Intelligence, moving users from simple queries to sophisticated, reproducible workflows. The first half of the course, The Art of Instruction, focuses on the fundamental syntax of communication with Large Language Models (LLMs). Participants will master the mechanics of prompt design by defining precise parameters—tasks, inputs, constraints, and styles—to eliminate ambiguity and drift. We move beyond basic requests into advanced methodologies, exploring how techniques like “Prompt Chaining,” role-setting, and Chain-of-Thought (CoT) prompting can guide the model through complex logic puzzles. By understanding the nuances of Zero-shot versus Few-shot prompting, learners will acquire the toolkit necessary to turn a generic AI model into a specialized domain expert capable of handling intricate instructions. The true power of an LLM lies not just in conversation, but in its ability to act as a reasoning engine for business data. The second day, Data Reasoning & Analysis, bridges the gap between text generation and functional data science. Students will learn to interface with external assets, leveraging the AI to digest text files for summarization and analyze spreadsheets for trend filtering. The curriculum tackles real-world operational challenges, such as automated data cleaning and the use of the ReAct (Reasoning and Action) framework to facilitate interactive decision-making. Finally, participants will learn to constrain AI outputs into machine-readable formats like JSON, CSV, and Markdown, culminating in “The Disaster Shipment”—a capstone analytics challenge that requires combining every technique learned to solve a complex logistics crisis.

Course Objectives: In this course, you will learn:

- Design Precision Prompts
- Apply Advanced Reasoning
- Leverage In-Context Learning
- Operationalize Data Analysis
- Standardize Deliverables ## Outline

OUTLINE:

DAY 1: THE ART OF INSTRUCTION

- Lecture: Large Language Models
- Lecture + Lab: Getting Started with the Lab Environment
- Lecture: Writing Prompts for LLMs
- Lecture + Lab: Define Prompt Parameters: Task, Inputs, Outputs, Constraints, Style
- Lecture + Lab: Prompt Techniques: Chaining, Set Role, Feedback, Examples
- Lecture: Zero-shot and Few-shot Prompting
- Lecture + Lab: Implementing Zero-shot and Few-shot Techniques
- Lecture: Chain-of-Thought (CoT) Prompting
- Lecture + Lab: Self-Generated Chain of Thought (CoT)

DAY 2: DATA REASONING & ANALYSIS

- Lecture: Data Analytics with AI
- Lecture: Prompting with File Inputs
- Lecture + Lab: Text Input Files: Extraction and Summarization
- Lecture + Lab: Spreadsheet Input Files: Analysis and Filtering
- Lecture: Using Prompts for Data Cleaning
- Lecture + Lab: Data Cleaning and Preparation
- Lecture: ReAct Prompting: Reasoning and Action
- Lecture + Lab: Interactive Decision Making with ReAct
- Lecture + Lab: Producing Formatted Outputs (JSON, CSV, Markdown)
- Challenge: Data Analytics Challenge - The Disaster Shipment